UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

INTELLECTUAL VENTURES I LLC and INTELLECTUAL VENTURES II LLC, Plaintiffs, v. LENOVO GROUP LIMITED, Defendant.	Civil Action No. 6:23-cv-00307-ADA

PLAINTIFF'S RESPONSIVE CLAIM CONSTRUCTION BRIEF

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Per the Court's Order Governing Proceedings – Patent Case and Joint Scheduling Order,

plaintiffs, Intellectual Ventures I LLC, and Intellectual Ventures II LLC (collectively "IV"),

respectfully submits this claim construction brief in response to defendant Lenovo Group

Limited's ("LGL" or "Lenovo") Opening Claim Construction Brief ("Opening Brief").

I.   INTRODUCTION

IV filed this case on April 26, 2023, asserting a total of five patents, four of which—U.S.

7,325,140; 8,474,016; 7,623,439 and 7,646,835—have disputed claim terms requiring

construction.[1] The accused products span a wide range of Lenovo's product lines, including

servers, laptops, smartphones, tables, and other wireless devices. The inventions claimed in the

asserted patents include technology such as cyclic diversity in 802.11 wireless networks,

synchronizing timing relationships of integrated circuit components relating to memory control

and access, and secure management of network elements using in-band and out of band access

means.

More specifically, U.S. Patent Nos. 7,325,140 (the "'140 Patent"), and 8,474,016 (the

"'016 Patent"), share a common specification and describe a computer network management

system designed for securely managing network devices remotely. The claimed inventions

feature a secure management access controller that directly communicates with a network

device, facilitating remote and secure administration via the use of in-band and out-of-band

connection means, secure bus systems and a virtual management interface scheme that helps

ensure the separation of user communications from management communications to enhance

security. Additionally, it incorporates network and power monitoring and notification systems,

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[1] U.S. 7,089,443 is also asserted but does not have any claims proposed for construction.
Further, as noted in IV's Responsive Claim Construction brief in *Intellectual Ventures I LLC, et.
al v. Zebra Technologies Corporation*, Case No. 6:23-cv-00292-ADA, the disputed terms of the
'439 and '835 Patents are discussed in IV's response to Zebra's Opening Brief.

alongside authentication and authorization capabilities, to ensure the security of management communications.

Lenovo has proposed constructions for the disputed terms that stray from core claim construction principles, either include irrelevant or exclude relevant corresponding structure for means-plus-function terms or incorrectly allege that clearly definite claim terms are indefinite. For these reasons, as more specifically discussed below, IV respectfully asks this Court to adopt its well-reasoned proposals and reject Lenovo's erroneous constructions.

II.   LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the art does not appear to be disputed. IV generally agrees with Lenovo's identification of the qualifications of one of ordinary skill in the art in the field of the asserted patents, however, reserves the right to clarify its position to the extent that any of Lenovo's arguments illustrate a deviation from the level of skill identified in its Opening Brief. Opening Brief at 2-3.

III.   DISPUTED TERMS

A.   U.S. Patent No. 8,474,016

1.   *"processor configured to facilitate operation of the network device"* *(claim 1)*

LGL's Proposed Construction	IV's Proposed Construction
Subject to §112, ¶6 **Function**: "facilitating the operation of the network device" **Structure**: Indefinite	Plain and ordinary meaning

Lenovo argues that claim 1 is indefinite because: (a) this claim term is subject to §112, ¶6; that (b)(i) the processor is not an adequate structure; and (b)(ii) an algorithm for performing the allegedly claimed function is not disclosed. Opening Brief at 3-7. This argument is wrong.

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The fundamental error in Lenovo's analysis is the failure to recognize what is claimed versus what is the intended environment. Lenovo alleges that "[t]wo distinct processors are claimed, and that "facilitating the operation of a network device" is a claimed operation or function. *Id*. at 4-5. Neither allegation is correct, as explained referring to the demonstrative below.[2]
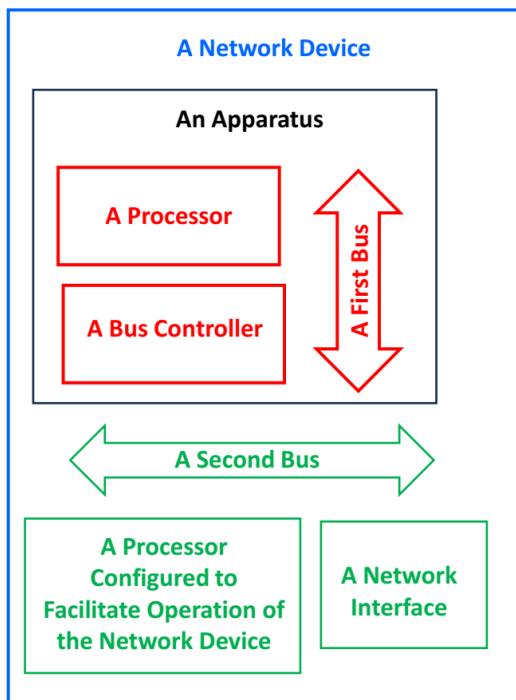
Specifically, claim 1 recites "a processor configured to control one or more functions of a network device." '016 Patent, at 22:25-45. For clarity, this processor is referred to hereinafter as the "Red Processor." The functions of the network device are controlled by the Red Processor, i.e., the network device is managed by the claimed apparatus. *See id.*, at 1:27-32. Thus, the claim language makes it clear, and the specification supports, *see generally, id*., that the

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[2] In the demonstrative above, the claimed "apparatus" is shown in black. The claimed elements of the apparatus are highlighted red. The "network device" that the claimed apparatus manages, is highlighted blue. The components of the network device are highlighted green.

"network device" is not claimed. Rather, it is part of the intended environment – a device to be

managed.

Claim 1 recites that the "network device" has "a network interface" for receiving data

requests and encrypted management requests from a remote administrator, and a bus, *i.e.*, the

"second bus." *See id.*, at 22:25-45. This information, however, is further received by the

claimed "bus controller" and conveyed via the claimed "first bus" of the apparatus to the Red

Processor, allowing the remote administrator to control the functions[of the network device. *See,*

e.g., 1:35-46, 55-60 (disclosing remote management of a system, *e.g.*, a managed device, by a

remote administrator). Thus, the network interface and the second bus, and the remote

administrator as well, are part of the intended environment from which the information

associated with controlling the network device is received.

Claim 1 further recites "a processor configured to facilitate operation of the network

device." *See id.*, at 22:25-45. For clarity, this processor is hereinafter referred to as the "Green

Processor." The claim language makes it clear that the Red Processor "is distinct from" the

Green Processor. *Id.* The Green Processor simply operates the network device. It does not

enable a remote administrator to manage or control the network device. *See id.*, at 5:48-61

(disclosing that the remote management of a managed device is performed by a processor in the

SMACC – a processor different from that in the managed device). Accordingly, the Green

Processor is nothing more than a component of the network device, which forms the intended

environment of the claimed apparatus, a premise fully supported by the specification.[3] *See*

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[3] Because the Green Processor – the "processor configured to facilitate operation of the network
device" is not a claimed element of the "apparatus" and "facilitate[ing] operation of the network
device" is not a claimed function, this claim term is not subject to §112, ¶6. *See* Pre-AIA
35.U.S.C. §112. *See HTC CORP v. IPCom GmbH & Co., KG*, 667 F.3d 1270, 1274-76 (Fed Cir.

generally, id.; *Glob. Equity Mgmt. (SA) Pty. Ltd. v. Expedia, Inc.*, No. 2:16-cv-00095-RWS-RSP, 2016 WL 7416132; *see also Optimum Imaging Techs. LLC v. Canon Inc.,* No. 2:19-CV-00246-JRG, 2020 WL 3104290 at *24-25 (E.D. Tex. June 11, 2020) ("functional language of the claim [that] merely describes the structure and capabilities of the claimed apparatus...is sufficiently definite")

Furthermore, because "facilitate[ing] operation of the network device" is not a claimed function (*supra* FN 3), and because the Green Processor and the network device are only parts of the intended environment, a POSITA would readily interpret the Green Processor as any generic, conventional processor. *See Clear Imaging Research, LLC v. Samsung Electronics Co., Ltd.*, 2020 WL 6384731 at *8 (E.D. Tex., 2020) ("the term "processor" is accorded its customary meaning of a class of structures on which software can run"). Therefore, IV's proposed construction of this claim term is correct, and the Court should adopt it.

2.   *"the apparatus of claim 1, wherein the apparatus is a component within the network device" (claim 9)*

LGL's Proposed Construction	IV's Proposed Construction
Indefinite	Plain and ordinary meaning

Lenovo alleges that "a POSITA would not be able to ascertain how the apparatus could be a component within the network device as recited in Claim 9 when Claim 1 describes the exact opposite – namely that the network device is a component within the apparatus." Opening Brief at 7. In support, Lenovo contends that claim 1 "positively recites" the "network device," and that it is not the "intended environment that is introduced inferentially." *Id.*, at 7-8.

Contrary to these allegations, as explained above, the components of the network device including the network interface, and the second bus, merely provide information to the claimed

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2012 (finding that "six [of eight] functions define the network environment; they are not functions performed by th [claimed] mobile station").

apparatus, and that the processor configured to facilitate operation of the network device does

not perform any claimed function pertaining to managing the network device by a remote

administrator. *See supra*, §III.A.1. Thus, Lenovo's perceived indefiniteness issue arises only

from its incorrect conclusion that "the network device is a component within the apparatus."

Once that error is corrected, it follows that claims 1 and 9 are consistent with each other, as seen

in the demonstrative figure above. *Id*.

It should be understood that consistent with claim 1, claim 9 also does not recite the

network device as a claimed element. Rather, claim 9 recites a particular arrangement of the

claimed apparatus within its intended environment. Accordingly, the Court should not find

claim 9 indefinite, and should adopt IV's proposed construction.

B.   U.S. Patent No. 7,325,140

1.   *"remote device management communication system for securely controlling access to management applications and communications to and from said management applications on network devices in a distributed computer network that includes one or more network services, one or more secure management access controllers, and one or more managed network devices, the remote device management system comprising:" (claim 1)*

LGL's Proposed Construction	IV's Proposed Construction
Preamble is limiting	Preamble is not limiting

The preamble of claim 1 is not limiting because it is redundant of elements in the body of

the claim and the body otherwise sets forth a structurally complete invention. Lenovo's main

argument for the preamble being limiting is that it provides antecedent basis for "multiple, vital

claim limitations." Opening Brief at 10. Lenovo states that the preamble provides antecedent

basis for "said managed network device," "said one or more network services," and "said secure

management access controller." *Id.* With respect to "said secure management access controller,"

Lenovo's argument is belied by the body of the claim. That term takes antecedent basis from the

first element after the preamble which claims, "at least one secure management access

controller." '140 Patent at 22:40-41. Thus, the preamble does not provide an antecedent basis for this term.

Regarding the other two terms— "said managed network device" and "said one or more network services"—Lenovo is correct that they are introduced in the preamble, but it misapplies the relevant legal standard. More specifically, the Federal Circuit has made clear that "dependence on a particular disputed preamble phrase for antecedent basis *may* limit claim scope." *Unwired Planet LLC v. Google Inc.*, 111 F.Supp. 3d 1120, 1127 (D. Nev. 2015) *aff'd in relevant part*, 660 Fed. Appx. 974 (Fed. Cir. 2016) (*citing Catalina Mktg. Int'l*, 289 F.3d 801, 808 (Fed. Cir. 2002)). It is well-settled that "whether to treat a preamble as a limitation is determined on the facts of each case in light of the overall form of the claim, and the invention as described in the specification and illuminated by the prosecution history." *Arctic Cat Inc v. GEP Power Products Inc.*, 919 F.3d 1320, 1327 (Fed. Cir. 2019) (internal citations omitted). When the facts here are applied to this precedent it is apparent that one of skill in the art would consider the claim structurally complete without the preamble and easily be able to determine the claim scope and meaning.

In arguing that the preamble defines positive limitations in the body of the claim, Lenovo ignores that the claim body describes the necessary structure of the terms finding their antecedent basis in the preamble. Opening Brief at 10-11. First, the preamble does not provide any necessary structure or further definition required to understand the term "managed network device" as used in the claim body. The claim body describes the necessary structure of the managed network device which includes having a data bus connected to the at least one secure management access controller, being capable of receiving communications over that bus, being "networked" to allow for remote management, and supporting the virtual management interface

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utilizing its user interfaces. '140 Patent at 22:40-43. Despite introducing the term "managed network devices," the preamble provides no structure with respect to the managed network device other than "one or more" are present in the claimed remote device management communication system. *Id.,* at 22:36-40. It is the body that fully describes the required capability and structure of the managed network device, making the preamble's recitation superfluous and therefore, not limiting. *Schumer v. Laboratory Computer Systems, Inc.*, 308 F.3d 1304, 1310 (Fed Cir. 2002).

This is also true for the second of the claim elements that Lenovo argues takes its antecedent basis from the preamble— "said one or more network services." The preamble simply introduces the term but provides nothing in terms of structure beyond that the remote device management communication system includes "one or more network services." '140 Patent at 22:36-40. The structure of the network services is found in the claim body, including being connected to the secure management access controller via an out-of-band access connection and at least one virtual management interface, and facilitating the management of the network device. *Id*., at 22:44-47. This conclusion is further supported by the specification's disclosure which describes "network services" as being utilized to manage the network device, listing an Access Control System (ACS), NTP services, and Domain Name Services (DNS) as examples. *Id.*, at 7:45-56. Therefore, while the term "one or more network services" is first introduced in the claim's preamble, no additional factors are present to indicate that the preamble should be limiting, and without more the presumption that a preamble is non-limiting is not overcome. *See Panasonic Corp. v. Magna Int'l Inc*., No. 6-21-CV-319-ADA, 2022 WL 625089, at *18 (W.D. Tex. Mar. 3, 2022).

Even if the two terms at issue in the preamble were considered limiting because they provide an antecedent basis for the same terms repeated in the claim body, Lenovo's conclusion that that makes the entire preamble limiting is legally incorrect. It is well-settled law that just because a preamble provides antecedent basis for a term found in the body that does not transform the entire preamble into a limiting element. *TomTom Inc. v. Adolph*, 790 F.3d 1315, 1322-24 (Fed. Cir. 2015). To the contrary, if at all, only those parts of the preamble that provide antecedent basis for terms in the body should be construed and considered limiting. *Id.* Here that means that if anything, only the terms "managed network devices" and "network services" from the preamble could be considered limiting and construed. This further highlights the deficiencies in Lenovo's argument because those very terms are present in the claim body and there is no indication that their presence in the preamble confers a different meaning.[4]

2.   *"out-of-band connection means:" (claims 1, 6, and 7)*

LGL's Proposed Construction	IV's Proposed Construction
Subject to 112, ¶6 **Function**: "connecting said one or more network services or remote users with said secure management access controller for management of said network device" **Structure**: Structure disclosed at 3:2-4, 6:14-21, 7:60-62, 12:21-13:31, 15:3-25, 15:40-16:34, FIGS. 3-5, 9-13, 18, and 23-26 and equivalents	Subject to 112, ¶6 **Function**: "connecting said one or more network services or remote users with said secure management access controller for management of said network device" **Structure**: a SMACC Network Enabled Management Interface; and/or communication system component(s), such as protocols, modems, and physical interfaces disclosed in the specification; and/or equivalents of both the SMACC Network Enabled Management Interface; and/or communication system component(s). *See* '140 Patent, 3:2-4, 6:14-21, 7:60-62, 8:30-38, 11:16-18, 12:21-13:31, 15:3-25,

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[4] If the Court determines that the terms "managed network device" and/or "one or more network services" in the preamble are limiting, the terms should be given their plain and ordinary meaning as both are common terms in the art with an understood meaning and are used in the claims in accordance with such meaning. *Thorner v. Sony Computer Entertainment America LLC*, 669 F.3d 1362, 1365-66 (Fed. Cir. 2012).

LGL's Proposed Construction	IV's Proposed Construction
	15:40-16:34, FIGS. 3-5, 9-13, 18, 23-26, and 30.

The parties agree that "out-of-band access connection means" is subject to Section 112, ¶6, and agree to its claimed function. Having further reviewed the patent's intrinsic record in light of Lenovo's Opening Brief, IV agrees that all structure cited by Lenovo in the above table is corresponding structure for the disputed term and has updated its proposal accordingly.[5] The only remaining substantive dispute appears to be three additional citations that IV has proposed as a result of its re-evaluation, namely the corresponding structure disclosed at 8:30-38, 11:16-18 and figure 30, and Lenovo's objection to "[p]laintiff's inclusion of "communication systems component(s), such as protocols, modems, and physical interfaces." Opening Brief at 12.

Regarding the latter dispute, Lenovo alleges that the inclusion of the language "communication systems component(s), such as protocols, modems, and physical interfaces" in IV's summary of the corresponding structure "appears to be an attempt to go beyond the specific protocols, modems, and physical interfaces that are disclosed in the specification." *Id.* But IV has merely proposed this language as a summary description of the specific citations it listed in support of the function's corresponding structure, not a citation to any specific additional structure IV contends is present above and beyond that disclosed at the specification citations noted in IV's proposal.

Specifically, commonsense dictates, and a POSITA would have known, that a connection, *i.e.*, electronic connection at issue in the '140 patent, involves structural elements of

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[5] IV agrees to the inclusion of the additional structures that Lenovo has proposed to include, but notes that the connection means with respect to a connection medium are not limited to the PSTN or packet cellular network. *See, e.g.*, '140 Patent, 6:17-21, 12:30-35 (disclosing several interfaces including an interface to the Internet, and protocols including the "SNMP" protocol and the "VPN [virtual private network] technology such as IPSec.").

different kinds, *e.g.*, an entity to be connected, a medium of connection, and one or more

software and/or hardware components at an entity to couple to and engage with the medium. A

POSITA would have also understood that the software/hardware components typically include

protocols, modems, and physical interfaces. It then follows that a structure corresponding to

"connection means" can include a structural element of a particular kind, individually or in

combination with one or more structural elements of a different kind. While an end-to-end

connection may require a combination of structural elements of different kinds, each kind of

structural element contributes individually, and not necessarily in combination, to a

"connection." This is consistent with the construction of an MPF limitation, where "a means

clause must be construed to cover the disclosed structure and equivalents thereof" and a

"[d]isclosed structure includes" "any alternative [or multiple] structures identified" in the

patent." *Serrano v. Telular Corp.*, 111 F.3d 1578, 1582-83 (Fed. Cir. 1997) (internal citations

omitted). Therefore, while the "dispute" here is immaterial because it is with respect to

summary language, the Court should recognize that the corresponding structures agreed to by the

parties do not imply that a combination of such structures is either required or excluded.

IV's additional proposals found at 8:30-38, 11:16-18 and Fig. 30, should be included

because just like the agreed upon citations at 6:14-21, 12:21-13:31 and 15:40-16:34, they

disclose various other protocols and interfaces that may be used for out-of-band connections.

See '140 Patent, 8:30-38 ("example management protocols that can be supported include: telnet,

ssh, http, https, snmp, dns, tftp, ftp, ntp, and xml."); *Id.,* at 11:16-18 (disclosing embodiment of

the SMACC chipset which includes a dedicated chip for providing IPSec). The agreed to

structures include several interfaces including an interface to the Internet, and protocols

including the "SNMP" protocol and the "VPN [virtual private network] technology such as

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IPSec." *Id.*, at 6:17-21, 12:25-34. A POSITA would recognize that the SNMP protocol and the

IPSec technology are based on the Internet Protocol (IP), where the connection medium is the

Internet, accessible via, *e.g.*, an Ethernet interface and/or a broad-band modem. The additional

disclosures proposed by IV include other protocols linked to the claimed function that are IP-

based, such as SSH and HTTP (and interfaces that can support such protocols), which a POSITA

would clearly understand as corresponding structure. Therefore, all protocols and interfaces

corresponding to the claimed function should be included as structure, including those identified

by IV and discussed above.

3.   *"virtual management interface connection means" (claim 1)*

LGL's Proposed Construction	IV's Proposed Construction
Subject to §112, ¶6 **Functions**: (i) "connecting said one or more network services or remote users with said secure management access controller"; (ii) "provides logical separation of management data from user data" (iii) "utilizes user interfaces of said managed network element for connecting said one or more network services or remote users with said secure management access controller" **Structure**: Structure disclosed at: 3:2-33, 6:63-7:5, 9:2-7	Subject to §112, ¶6 **Functions**: (i) "connecting said one or more network services or remote users with said secure management access controller"; (ii) "provides logical separation of management data from user data" (iii) "utilizes user interfaces of said managed network element for connecting said one or more network services or remote users with said secure management access controller" **Structure**: a Virtual Management Interface (VMI) coupled to a user interface on the managed device, where the VMI utilizes communication system component(s), such as protocols, modems, and physical interfaces disclosed in the specification; and/or equivalents. *See* '140 Patent, 3:2-33, 6:22-31, 6:63-7:5, 8:20-29, 9:2-7, 11:60-67, 12:5-21, 12:37-64, 14:55-16:34, FIGS. 3-5, 9-13, 18, and 23-26.

The parties agree that "virtual management interface connection means" is subject to

Section 112, ¶6, and agree as to the claimed function. The parties disagree regarding the

corresponding structure.[6] More specifically, IV agrees that 3:2-33, 6:63-7:5 and 9:2-7 are

corresponding structure for the claimed function. IV also contends, however, that 6:22-31, 8:20-

29, 11:60-67, 12:5-21, 12:37-64, 14:55-16:34 and related figures identified above, are

corresponding structure and should be included part of the construction. Lenovo takes issue with

these citations because (1) it claims the SMACC, the SMACC Network Enabled Management

Interface are being described and are not corresponding structure for the VMI, and (2) the

"inclusion of 'communication systems component(s), such as protocols, modems, and physical

interfaces'" do not necessarily correspond to the VMI. Opening Br.at 13-14. But Lenovo takes

an impermissibly narrow view of what structure is corresponding and therefore mischaracterizes

IV's citations as relating to something other than the VMI. This is not true.

　　For instance, the VMI is described as "the interface between the SMACC chipset and the

user data interfaces" that may be used in in-band communication. *See* '140 Patent, at 6:22-31.

The structures at 8:20-29 include the use of VPN with the VMI. The structure at 11:60-67

includes the VMI using a *user interface* for a connection. The structure at 12:5-21 includes a

VPN such as IPSec for logical separation of management traffic and user data. The structures at

12:37-64 include various embodiments of the SMACC, which include the VMI, using different

types of connection interfaces and protocols. The structures at 14:55-16:34 include

communication system component(s), such as protocols, modems, and physical interfaces that

may be used by a VMI for connection to network services, and access by remote users. These

structures are depicted in FIGS. 3-5, 9-13, 18, and 23-26. Each of the structures that IV

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[6] IV preliminarily identified the structures at 6:22-31, 8:20-29, 11:60-13:31, 14:55-16:34, FIGS.
3-5, 9-13, 18, and 23-26 as the corresponding structures.

identifies, individually and in combination with one or more other structures, facilitates a VMI connection, and thus, are examples of VMI "connection means."

IV agrees that "the SMACC, the SMACC Network Enabled Management Interface, and corresponding structure[s] for the out-of-band access" are not the VMI connection means. The portions of the '140 patent that IV cites are nevertheless necessary because, as discussed above, those portions describe various "connection means" in the context of the VMI. References to the SMACC, the SMACC interface, and out-of-band communication are only incidental.

Lenovo's second concern—that the "inclusion of 'communication systems component(s), such as protocols, modems, and physical interfaces'" may not be limited to the disclosed structures and equivalents—is similarly misplaced. Opening Brief at 14. IV expressly stated in its description of the proposed construction that "communication system component(s), such as protocols, modems, and physical interfaces *disclosed in the specification*" along with their equivalents, and those of the VMI are disclosed as the corresponding structure to the claimed function. *Id.*, at 12. There is no basis for Lenovo's argument that somehow IV's citations imply that structure <u>not disclosed</u> in the specification somehow makes up structure corresponding to the claimed function.

Accordingly, because IV has identified the full scope of structure for the disputed term whereas Lenovo has excluded substantial support for the same, the Court should adopt IV's identification of the corresponding structures.

4.   *"protection means" (claim 11)*

LGL's Proposed Construction	IV's Proposed Construction
Subject to §112, ¶6	Subject to §112, ¶6
Function: "protecting the management data"	**Function**: "protecting the management data"
Structure:	**Structure**: A virtual private network (VPN)
Structure disclosed at	via a virtual management interface (VMI)
3:49-60, 6:31-33, 6:34-7:6, 12:5-36, and	and/or an SMACC interface; and/or
FIGS. 5 and 22	equivalents.

	See '140 patent, 3:49-60, 6:22-33, 6:58-7:6, 12:5-36, FIGS. 3-5, 21, and 22.

The parties agree that "protection means" is subject to Section 112, ¶6, and agree as to the claimed function. Regarding the corresponding structures, the parties agree as to those disclosed at 3:49-60, 6:31-33, 6:58-7:6, 12:5-36, and FIGS. 5 and 22. The parties disagree, however, as to the additional structure proposed by IV at 6:22-31 and figures 3, 4, 21 and 22, as well as the additional structure cited by Lenovo at 6:34-57.

Starting with the structure at 6:34-57, IV agrees to its inclusion with the caveat that the structure described therein does not require the combination all three structures. More specifically, while the '140 patent does state that "a combination of firewall, VPN, and authentication and authorization applications" can protect the management interface ('140 Patent at 6:34-37), in light of the specification as a whole, a POSITA would understand that "combination" as used in the quoted sentence indicates a *group* of three alternatives – not a structure necessarily including all three alternatives. In other words, the '140 patent makes it clear that a certain alternative can *individually*, or in combination with either one or both of the other two alternatives, protect the management interface. *Id.*

For example, the '140 patent discloses using a firewall by itself. *See id.* at 6:44-47 ("the SMACC can be configured to only allow the protocols necessary for managing the device to access the SMACC. No other protocols will be allowed through the interface"), *see also id.* at 7:7-17 (disclosing controlling access by filtering devices attempting to connect to it by IP addresses, and/or by requiring presentation of a certificate or a shared secret, etc.). Furthermore, it is described that a VPN can be used to access "an authentication/authorization server." *See* '140 Patent, at 15:47-56. In this case, a firewall may be used, but its use is not essential, and local authentication is unnecessary. Similarly, the "authentication and authorization of

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administrators can either be configured and accomplished locally to the SMACC, and/or [by accessing] centralized services" via the []VMI or SMACC interface." *Id*., at 6:48-52. A POSITA would understand that when the authentication/authorization is performed locally, authentication and authorization applications, such as those implementing TACACS+ and/or LDAP may be used, but that the use of a firewall and the VPN is not required. In sum, because the '140 patent discloses that a firewall, VPN, and authentication and authorization applications can be employed *individually*, or in combination with either one or both of the other two alternatives, to protect the management interface, IV agrees to the inclusion of the structure at 6:34-57 to the extent a "combination" of the alternative structures is not deemed essential.

In disagreeing with IV's inclusion of the structure at 6:22-31, Lenovo agrees that the VMI "logically separate[s] management traffic from user data," '140 Patent, at 6:22-24, but alleges that this structure is "not clearly linked to the function of "'protecting the management data.'" Opening Brief at 15. This argument is flawed for at least two reasons.

First, the '140 patent discloses that the "commingling of user traffic and management traffic can compromise the security of the device management." '140 Patent, at 3:21-23. A POSITA would understand that security of the device management includes protecting management data, and that separating management traffic, i.e., management data, from user data can protect that data from the security risks inherent in commingling.

Second, the "VMI utilizes … [a] VPN to build secure tunnels between the SMACC chipset and the management center … to provide the transport of the management data," *id*., at 6:26-31, where the "VPN technology provides the logical separation, confidentiality, and integrity of the management traffic while it is *in transit*." *Id*., at 6:31-33. A POSITA would understand that for a VPN to protect management traffic in transit from the SMACC chipset to

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the management center, it must first be separated from user data, and that it is the VMI that

provides this function. FIGS, 3, 4, and 21 depict that the VMI facilitates the use of an in-band

network by logically separating, and thus protecting, the management data. Therefore, the

additional structure IV identifies is linked to the claimed function and should be included in the

Court's construction.

> 5.   *"monitoring means for monitoring the status of at least one computer network component" (claim 13)*

LGL's Proposed Construction	IV's Proposed Construction
Subject to §112, ¶6 **Function**: "monitoring the status of at least one computer network component" **Structure**: Algorithms disclosed at 7:25-44, 17:64-18:4, 18:20-51, 21:28-65, and FIGS. 15-16	Subject to §112, ¶6 **Function**: "monitoring the status of at least one computer network component" **Structure**: the SMACC; and/or the SMACC processor; and/or circuitry and/or software disclosed in the specification as monitoring the status of network components and availability of power thereto; and/or equivalents of the SMACC; and/or the SMACC processor; and/or the above-identified circuitry and/or software. *See* '140 patent, 7:25-44, 17:64-18:4, 18:20-51, 19:23-31, 19:65-20:4, 20:11-21:19, 21:28-65, FIGS. 2, 9, and 15-17.

The parties agree that "monitoring means for monitoring the status of at least one

computer network component" is subject to Section 112, ¶6, and agree as to the claimed

function. The parties also agree as to the corresponding structure at 7:25-44, 17:64-18:4, 18:20-

51, 21:28-65, and FIGS. 15-16. The dispute is therefore limited to the additional structure

proposed by IV at 19:23-31, 19:65-20:4, and 20:11-21:19.

Lenovo makes several arguments here, some of which are references to subsequent terms,

but all of which are incorrect. *See, e.g.*, Opening Brief at 16-17. Specifically, referring the

reader to its discussion for the claim term "monitoring means for monitoring the status of the

network power supply" (Opening Brief at 17), Lenovo alleges all claimed functions, including

monitoring of the status of at least one network component, must be performed by a special-purpose computer. Based on this erroneous allegation, Lenovo argues that the SMACC / SMACC processors are special-purpose computers and that algorithms implementing the claimed function are only those disclosed at 7:25-44, 17:64-18:4, 18:20-51, 21:28-65, and FIGS. 15-16. Opening Brief at 16 (citing *Williamson* for premise an algorithm for performing the claimed function is required). This argument is flawed because the '140 patent discloses that the claimed functions, including "reporting" are not necessarily implemented by a special purpose computer, and instead, can be implemented by a generic processor of a network device. *See infra*, §III.B.7; '140 Patent, 5:52-59. As such, *Williamson*[7] does not apply to "monitoring the status of at least one computer network component." Regardless, the '140 patent discloses certain specific techniques that may be used for this function.

As a threshold matter, a POSITA would understand that a managed network device—or an interface, e.g., a user interface, of the managed network device—is a component of a computer network. With respect to monitoring the network device, the '140 patent describes that the SMACC chipset can monitor "the main device boot process." '140 Patent, at 11:50-51; *see id*., at 17:27-29. Regarding monitoring an interface of a managed device, the '140 patent describes that under certain conditions, "network status information and alerts" are reported "over a secondary network," and that one such condition is "the failure of all of the managed device interfaces." *Id*., at 20:1-10. A POSITA would understand that the SMACC must monitor the managed device interfaces, to determine whether they have failed, and as a condition under which the secondary network must be used has occurred.

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[7] *Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015).

The '140 patent further discloses the SMACC can determine whether "specified threshold conditions are met or error conditions [have] occur[red]," *i.e.*, the SMACC can monitor a managed device and/or its interfaces for such conditions or errors, by "setting traps for information to be sent." *Id*., at 19:27-31. As examples of setting traps for information, and monitoring a managed network device, the '140 patent discloses using at least two specific techniques, namely, "SNMP traps and remote syslog messages, that "pass through the SMACC processor." *Id*., at 17:32-34. Thus, to the extent *Williamson* applies, the '140 patent discloses certain specific techniques that the SMACC / SMACC processor may use for "monitoring the status of at least one computer network component."

Lenovo also argues that the structures at 19:23-31, 19:65-20:4, and 20:11-21:19, (as reflected in FIGS. 2, 9, and 17), do not disclose the monitoring function. This is wrong because, as discussed above, the structure at 19:23-31 includes "setting traps for information," which is a monitoring function of the managed device and/or its interfaces. The structure at 19:65-20:4 further discloses using the secondary network for reporting of conditions at certain "times," and makes clear that determining whether at least one such condition has occurred entails monitoring the interfaces of the managed device, as discussed above. *See id*., at 20:4-10.

The structures at 20:11-21:19 include reporting loss of power at the site of the managed device. *Id*., at 20:21-23. As described below, the SMACC / SMACC processor are structures that monitor for loss of power. *See supra*, §III.B.6; '140 patent, at FIGS. 2, 9, 17 (depicting that the UPS can provide notifications to the SMACC via one or more buses). A POSITA would understand that the loss of power at the site of the managed device / SMACC would cause the managed device to become non-operational, and thus monitoring for the loss of power also includes monitoring the status of the managed device. Similarly, the structures at 20:11-21:19

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include waiting for the managed device to boot after power thereto is restored (*Id.*, at 21:1-6),

and where the SMACC chipset can monitor "the main device boot process." '140 Patent, 11:50-

51. Therefore, the additional structures that IV identified as corresponding to "monitoring the

status of at least one computer network component" should be included in the Courts'

construction.

   6. *"monitoring means for monitoring the status of the network power supply" (claim 14)*

LGL's Proposed Construction	IV's Proposed Construction
Subject to §112, ¶6 **Function**: "monitoring the status of the network power supply" **Structure**: Indefinite	Subject to §112, ¶6 **Function**: "monitoring the status of the network power supply" **Structure**: The SMACC; the SMACC processor; voltage detection circuitry; and/or equivalents. *See* '140 patent, 7:25-44, 11:25-36, 17:64-18:4, 18:20-51, 19:23-31, 19:65-20:4, 20:11-21:19, 21:28-65, FIGS. 2, 9, and 15-17.

  In arguing that this claim term is indefinite, Lenovo alleges that the SMACC processor is

a "special-purpose computer," and that the "specification does not disclose any algorithm,

formula, flow chart, or any prose explaining *how* the SMACC and/or SMACC processor

monitor[s] the status of the network power supply." Opening Brief at 18 (citing *Williamson*).

Citing Dr. Lee's testimony, Lenovo states that without disclosing a specific algorithm, a POSITA

would not understand how the SMACC processor can perform the claimed "monitoring." *Id.*

Lenovo's arguments fail because (1) *Williamson* is inapposite, (2) the '140 patent discloses

sufficient algorithms even if *Williamson* does apply, and (3) there is no prohibition against a

component or series of components performing more than one claimed function.

  First, in *Williamson*, the Court found that the patent at issue "makes clear that the

distributed learning control module *cannot be implemented* in a general purpose computer, but

instead *must be implemented* in a special purpose computer." *Williamson* at 1352. The '140

patent teaches the opposite – that the claimed functions can be implemented by a generic

processor of a network device. '140 Patent, at 5:52-59 ("the SMACC functions are implemented

on a separate processor ... however, this is not intended to limit the implementation" and that

[t]hese features also can be ... integrated ... with the main processor of a device" which can be a

generic processor). As such, *Williamson* does not apply to the "monitoring" function.

Even if *Williamson* does apply, however, the '140 patent describes at least two ways of

monitoring the status of a network power supply. Dr. Lee describes "numerous different ways to

monitor the status of the network power supply, such as deviations from a normal performance

profile, performance patterns, etc. *See* Lee Decl., ¶¶57-59. But a POSITA would understand

that detecting whether there is a loss of power from the network power supply also indicates its

status. *See* '140 Patent, at 11:25-36, 18:33-46, FIGS. 2 and 17. As described in the patent's

specification, one way to determine a loss of power is to monitor the voltage, which can be

detected from the circuitry and is indicative of a loss of power. '140 Patent, at a18:22-28, FIG.

15. The circuitry of FIG. 15 is described as detecting the status of a telephone line via the

ensuing loss of voltage (*See id.*), however, a POSITA would understand that this premise applies

equally to scenarios where other connectivity means are utilized.

Additionally, the '140 patent discloses that "an external UPS [can] provide a limited

supply of power in the event of a power outage and provide a management connection from the

external UPS to the SMACC for management of the UPS" which "would include *notification by*

the UPS to the SMACC on the loss of external power." *Id.*, at 18:38-44, FIG. 17. In fact, the

very next sentence states that "[i]f the *SMACC detects a power loss* from the external power

source, it will notify the management center of the loss of power." *Id.*, at 18:44-46. Thus, the

SMACC processor can monitor power outage of an external power supply by receiving and processing a "notification" from the UPS. A POSITA would know that receiving and processing signals / notifications from a connected device is a common, routine operation for a processor. Thus, contrary to Lenovo's allegation, the '140 patent describes at least two ways of monitoring the status of (e.g., power loss from) an external network power supply.

Finally, LGL argues that "[i]ndefiniteness is confirmed by the fact that Plaintiff identifies the SMACC as corresponding structure for at least three other claim terms" reciting different functions. Opening Brief at 19. LGL has not cited any authority to support this argument, and IV is not aware of any. In fact, Lenovo's argument directly contradicts Federal Circuit precedent. *See, e.g.*, *Intellectual Prop. Dev. v. UA-Columbia Cable*, 336 F. 3d 1308, 1318-20 (Fed. Cir. 2003) (finding a single common structure, a "photo-sensitive detector" was the corresponding structure to two claim terms: "photo-sensitive detector means" and "light beam demodulation means"). This is the case here. Therefore, the Court should not find this claim term indefinite, and should adopt IV's identification of the corresponding structures.

7.   *"reporting means" (claim 14)*

LGL's Proposed Construction	IV's Proposed Construction
Subject to §112, ¶6 **Function**: "reporting the status of the network power supply" **Structure**: Indefinite	Subject to §112, ¶6 **Function**: "reporting the status of the network power supply" **Structure**: The SMACC; and/or the VMI; and/or the SMACC interface; and/or equivalents. *See* '140 patent, 6:22-33, 7:39-44, 11:25-36, 11:60-67, 12:5-20, 18:20-51, 20:11-21:12, FIGS. 2, 3, 9, and 15-17.

In contending that this claim term is indefinite, Lenovo argues that "neither the VMI nor the SMACC interface perform any reporting," and "[i]nstead, they are merely connection interfaces over which the SMACC performs the actual function of reporting the status of the

network power supply." Opening Brief at 20. Lenovo further argues, that for the reasons

provided for the claim element "monitoring means for monitoring the status of the network

power supply," the '140 patent does not disclose a corresponding structure for the "reporting

means." *Id*. As explained directly above Lenovo is incorrect.

Even a layman understands that the act of "reporting" necessarily results in providing a

report from the SMACC to another entity, such as a management center. The '140 patent states

that the "the SMACC has two types of interfaces for transporting management traffic between

the SMACC and the management center:" namely, "Virtual Management Interface (VMI)" and

"SMACC Network Enabled Management Interface." '140 Patent, at 11:60-12:4, FIG. 3; *see id*.,

at 6:37-41, 18:38-46. Thus, from the plain language of the specification it is clear to a POSITA

that the VMI and the SMACC interface are means for the claimed "reporting" function.[8]

Having established that the patent discloses reporting means, Lenovo is left with arguing

that a reporting algorithm for the SMACC / SMACC processor is not disclosed. Lenovo's

argument is demonstrably incorrect.

For instance, as discussed with respect to the claim limitation "monitoring means for

monitoring the status of the network power supply," the '140 patent discloses that the claimed

functions, including "reporting" are not necessarily implemented by a special purpose computer,

and instead, can be implemented by a generic processor of a network device. *See supra*,

§III.B.7; '140 Patent, at 5:52-59. As such, *Williamson* does not apply to the "reporting"

function. Moreover, because reporting information is a common, routine function of a computer,

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[8] A POSITA would further understand—a fact with which Lenovo agrees—that the SMACC / SMACC processor can also be the means for the "reporting function." *See* Opening Brief at 20.

even without any specific "reporting algorithm," the SMACC / SMACC processor meet the

requirements of the corresponding structure.

Regardless, the '140 patent discloses protocols (and thus algorithms), that can be used for

reporting the status of a network power supply and which are sufficient to meet the requirements

of *Williamson*. Specifically, a POSITA would understand that reporting the status of a network

power supply can include reporting whether there is a loss of power from the network power

supply. *See* '140 Patent, at 11:25-36, 18:33-46, FIGS. 2 and 17. To this end, the '140 patent

discloses that the SMACC / SMACC processor can receive a "*notification by the UPS ... on the*

loss of external power," and then the SMACC "will notify the management center of the loss of

power." *Id*., at 18:38-46.

The '140 patent further explains algorithms for such reporting, stating that the "SMACC

may have information it can configure to send to the management center concerning its own

operation and the operation of the managed device"[9] and that this "information can be sent to the

management center utilizing protocols such as SNMP traps, or remote syslog records as well as

other possible proprietary or stands[10] [*sic*] based protocols." *Id*., at 8:1-7. "This information can

include auditing information, operational information, and alerts as well as other possible

information." *Id*., at 18:10-12; *see id*., at 19:65-20:1 (SMACC may report alerts to a network

management station "using a protocol such as SNMP over the VMI" or "using a SMACC

interface"), 20:11-16 (an alert may be sent if there is "loss of power"). Thus, contrary to

Lenovo's argument, the '140 patent describes specific protocols for reporting the status of (*e.g.*,

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[9] Upon the loss of external power, the operation of the managed device would stop. *See id.* at 20:11-16, FIG. 17.

[10] This is a spelling error that should read "standards".

power loss from) an external network power supply and therefore, even if *Williamson* is

applicable, the disputed term does not render the claim indefinite.

> 8.   *"means for monitoring connection attempts made through the management access controller" (claim 16)*

LGL's Proposed Construction	IV's Proposed Construction
Subject to §112, ¶6 **Function**: "monitoring connection attempts made through the management access controller" **Structure**: Algorithm disclosed at 22:4-25 and Figure 32.	Subject to §112, ¶6 **Function**: "monitoring connection attempts made through the management access controller" **Structure**: the SMACC; and/or equivalents. *See* '140 patent, 6:34-37, 6:44-57, 7:7-24, 8:13-19, 15:25-39, 15:47-56, 19:44-64, 22:4-25, FIG. 32.

The parties agree that "monitoring means for monitoring the status of the network power

supply" is subject to Section 112, ¶6, and agree as to the claimed function. The parties also

agree about the corresponding structure at 22:4-25, FIG. 32. But IV disagrees that this is the

only corresponding structure. As explained below, the '140 patent describes that the SMACC

can monitor connection attempts in two other ways, using a local database and/or using a remote

service, and discloses at least two protocols used towards this end.

Lenovo's argument is intended to improperly narrow the structure corresponding to the

claimed function of this term to a single embodiment described in the context of a PSTN.

Opening Brief at 21. This is contrary to long-established legal precedent and the intrinsic record,

as illustrated by Lenovo's own arguments. For instance, Lenovo concedes, that the SMACC

"detect[s] attempts to access the management interfaces by unauthorized systems or users." *Id*.

In the context of its "protection means" argument Lenovo states that "the firewall and

authentication and authorization applications . . . prohibit[] unauthorized access." Opening Brief

at 14-15. This squares with the specification's disclosure, where it states that a "primary

function of the SMACC is to protect the management interfaces from attack" and that this is

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"accomplished through a combination of firewall, VPN, and authentication and authorization applications." '140 Patent, at 6:34-37. A POSITA would have understood that a firewall and a VPN both intervene and monitor connection attempts and reject unauthorized connection attempts. *Id., at* 6:41-44. The VPN can also be used to access "an authentication / authorization server," where authentication/authorization entails monitoring connection attempts. *See id*., 15:47-56. In addition, "the SMACC can be configured to only allow the protocols necessary for managing the device to access the SMACC. No other protocols will be allowed through the interface." *Id*., at 6:44-47. Thus, the SMACC can monitor connection attempts by monitoring the protocols used to access the SMACC.

Furthermore, the "authentication and authorization of administrators can either be configured and accomplished locally to the SMACC, and/or centralized services can be accessed at the management center utilizing the secure management interfaces to the management center (VMI or SMACC interface)." *Id*., 6:48-52. More specifically, the "SMACC implements the client protocol for exemplary services such a Remote Authentication Dial-In User Service (RADIUS) protocol, Terminal Access Controller Access Control System (TACACS+), or Lightweight Directory Access Protocol (LDAP)." *Id*., at 6:53-57. A POSITA would know that TACACS+ and LDAP both facilitate user authentication.

Additionally, the SMACC can control access by devices, which entails monitoring access or connection attempts, by filtering devices by IP addresses, and/or by requiring presentation of a certificate or a shared secret, etc. *Id*., at 7:7-17. Users / administrators can be "challenged for valid credentials and authorization" using "a locally maintained database" or using centralized services. *Id*., at 7:17-24, 15:25-39, 19:44-64. Here again, TACACS+ and LDAP may be used

for user authentication. *See id*. Therefore, the corresponding structure for this term is not

limited to Lenovo's identification, but also include the disclosures proposed by IV..

     9.   *"said . . . remote users"" (claim 1)*

LGL's Proposed Construction	IV's Proposed Construction
Indefinite	Plain and ordinary meaning

Both of Lenovo's arguments as to why this term is indefinite— (1) that it claims a remote

user within the remote device management communication system, and (2) that it lacks

antecedent basis—are equally implausible. Lenovo's first argument relies on a remarkable

premise—that claim 1 is "nonsensical because it includes a person ('remote user') within the

claimed device management communication system." Opening Brief at 22. Anyone reading the

claim, not to mention one of ordinary skill in the art, would find such a construction absurd as it

is impossible to have a person <u>within a communication system</u>. What the claim actually says is

that the remote device management system's out-of-band access connection means and virtual

management interface connection means <u>connect</u> a remote user to the secure management access

controller. '140 Patent at 22:44-51. One of skill in the art would readily understand this to mean

that a remote administrator's computer literally connects to the communications system, which

in effect connects the "remote user," as the operator of the computer, to the system for

administration purposes. This is supported throughout the specification and figures.

For example, figures 4, 5 and 22 expressly show the "remote administrator" as a personal

computer connected to the network, and the remainder of the figures imply as much by

illustrating console or SMACC interfaces and logic coming in or out of the claimed system

which are used to connect the remote administrator's computer to the overall management

system. *See, e.g.*, '140 Patent at Fig. 4-5, 22, 4:14-25, 4:43-55. The specification repeatedly

discusses the remote administration of the communication system by "remote administrators" or

"network administrators" "typically responsible for normal maintenance of the elements" and

other similar descriptions. *See, e.g.,* '140 Patent at 1: 27-31; 1:47-52; 2:28-30; 5:65-6:4; 8:20-

24; 8:27-29; 15-6:60; 16:8-15; 16:22-27; 17:35-38; 18:58-61; 19:16-19; 19:31-33. In fact, it is

hard to imagine a scenario not taken from a science fiction novel in which Lenovo's

interpretation, which requires a human being inside of a computer communications system, is

plausible.

Lenovo's second argument, that the term lacks antecedent basis is also incorrect. Lenovo

here attempts a sleight of hand by strategically ignoring the phrase "one or more network

services or" between "connecting said" and "remote users" present in the second, third and

fourth elements of claim 1. Simply put, the word "said" modifies "one or more network

services" not "remote users." What is claimed is a communication system that connects either

"said one or more network services or remote users," or both, but does not include the term,

"said remote users." *See* '140 Patent at 5:3-6, 5:13-16, 5:23-27, 7:7-12, 7:45-56. Basic grammar

as well as the context provided by the claim itself in light of the specification compels the

conclusion that "said" is meant to modify only "network services." William Strunk Jr & E.B.

White, *The Elements of Style*, (4th ed.), p. 38 (modifiers should be placed next to the words they

modify).

For instance, the patentee understood the implications of using the word "said" to modify

terms introduced previously and did so elsewhere within the same claim. The second element,

for example, claims "said one or more network services," "said secure management access

controller," and "said network device." Within that element the term "or remote users" is

included with no modification, indicating that the absence of "or said remote users" was

intentional. Furthermore, subsequent iterations of the term "or remote users" present in the third

and fourth elements of claim 1 also exclude the modifier "said" indicating that the patentee was

intentional in his choice of claim language and modifiers. Further still, the specification

describes embodiments where either network services are connected to the network device, <u>or</u>

access by remote administrators is possible, or both. *See, e.g.*, 12:33-35; 16:5-15; Fig. 5.

Accordingly, it is clear from the plain language of the claim and lack of modifiers for the

disputed term that there is no antecedent basis issue and thus the term should be given its plain

and ordinary meaning as IV proposes.

C. U.S. Patent No. 7,646,835

1. *Preambles (claims 1, 7, 12, 20, and 23)*

LGL's Proposed Construction	IV's Proposed Construction
Preamble is limiting	Preamble is not limiting

For the reasons set forth in IV's Responsive Claim Construction Brief in the Intellectual

Ventures I LLC, et. al v. Zebra Technology Corporation, Case No. 6:23-cv-00292 (WDTX), and

filed concurrently herewith, the Court should construe these claim terms as not limiting and not

indefinite.

D. U.S. Patent No. 7,623,439

1. *"cyclically advancing the first OFDM packet by shifting the samples in a first direction" (claims 1 and 7)*

Zebra**Error! Bookmark not defined.**'s Proposed Construction	IV's Proposed Construction
"cyclically advancing the first OFDM packet by shifting the samples in the direction of transmission"	Plain and ordinary meaning

For the reasons set forth in IV's Responsive Claim Construction Brief in the Intellectual

Ventures I LLC, et. al v. Zebra Technology Corporation, Case No. 6:23-cv-00292 (WDTX), and

filed concurrently herewith, the Court should construe this claim term as its plain and ordinary

meaning.

IV.   CONCLUSION

Therefore, for the reasons stated above IV respectfully asks the Court to reject Lenovo's

proposed constructions and adopt IV's proposals instead.

February 27, 2024   Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document has
been delivered to all counsel of record via the Court's CM/ECF service on this 27th day of
February, 2024.

                                                     /s/ Karl Rupp

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